

Board of Water and Soil Resources Academy



By: Dan Swanson

**DNR Invasive Species
Specialist (Brainerd)**

October 25, 2011

Invasive Species Prevention: What you can do to help stop aquatic hitchhikers

Department of Natural Resources



Invasive Species

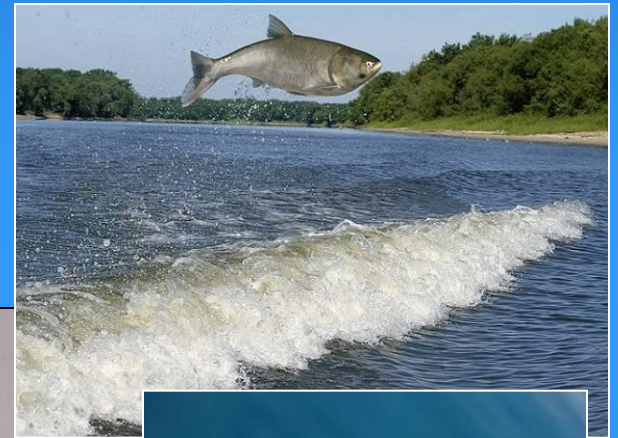
Definition:

“Invasive species” is a non-native organism that can adapt to life in a new environment and:

- 1) potentially cause economic loss, environmental damage, or harm human health; or
- 2) potentially threaten natural resources or the use of natural resources in our state



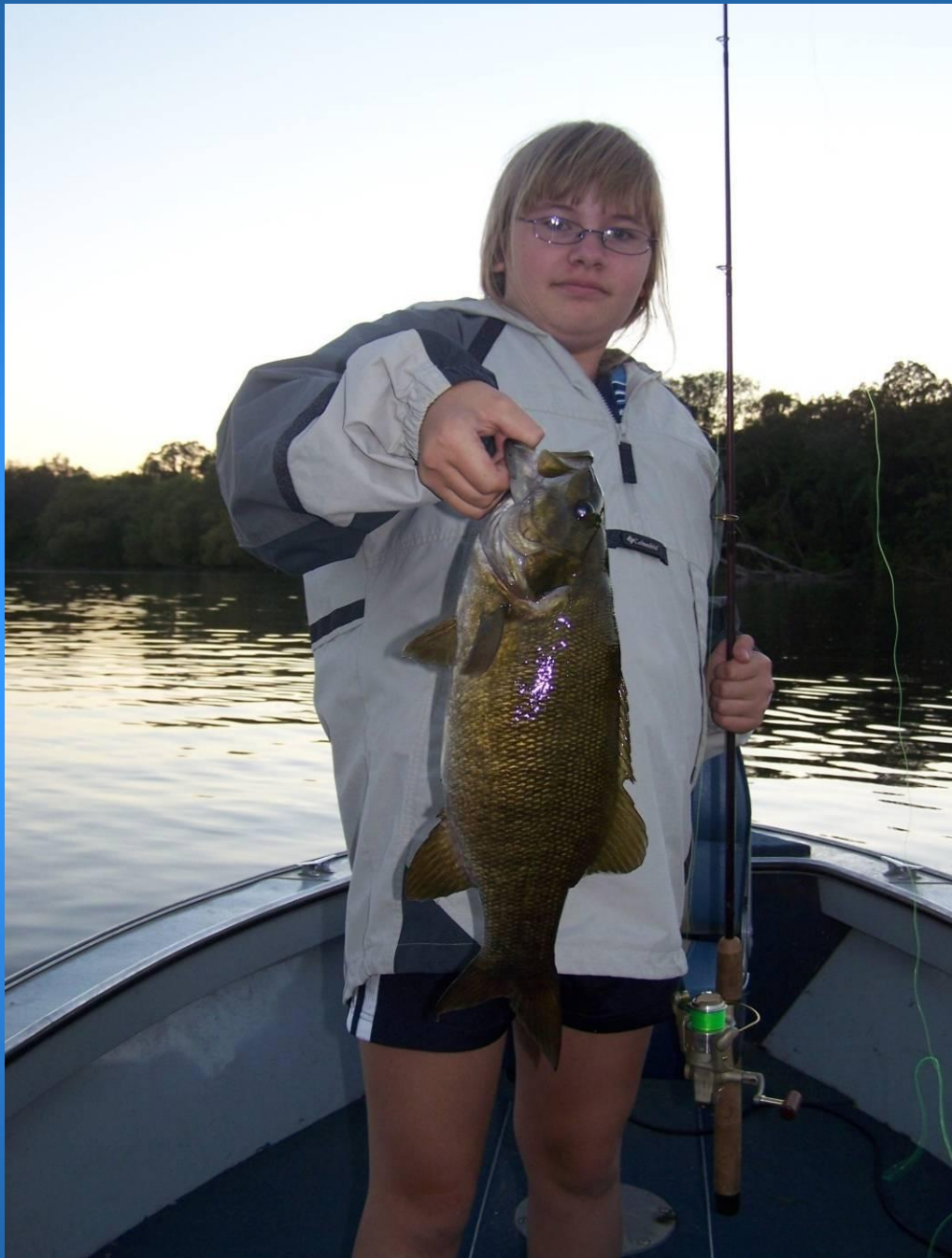
The Problem: Many Aquatic Invasive Species



Consequences of Invasive Species ?

- Ecology: invasive sp. compete with & displace native species
- Recreation: invasive species can degrade water quality & interfere with recreation
- Economics: terrestrial & aquatic invasive species damage & control costs in the U.S. is estimated at \$138 billion a year





Loss of
habitat
for our
native
fish
species

Loss of recreational opportunities



How are Invasive Species Moved?

- Human activity
 - Intentional
 - Unintentional
- Animal activity
 - Feeding
 - Travel pathways
- Weather activity
 - Floods
 - Storms



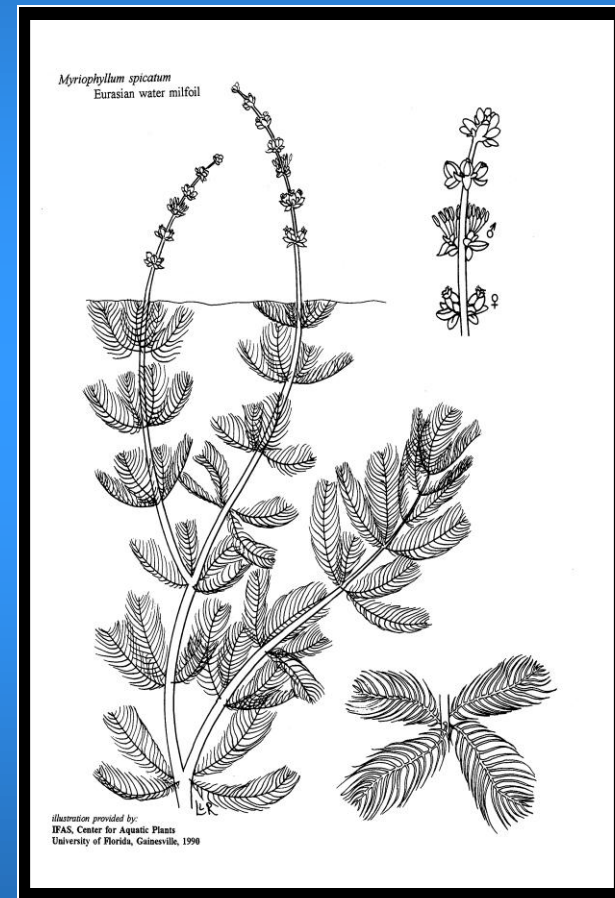
Many Pathways of Spread



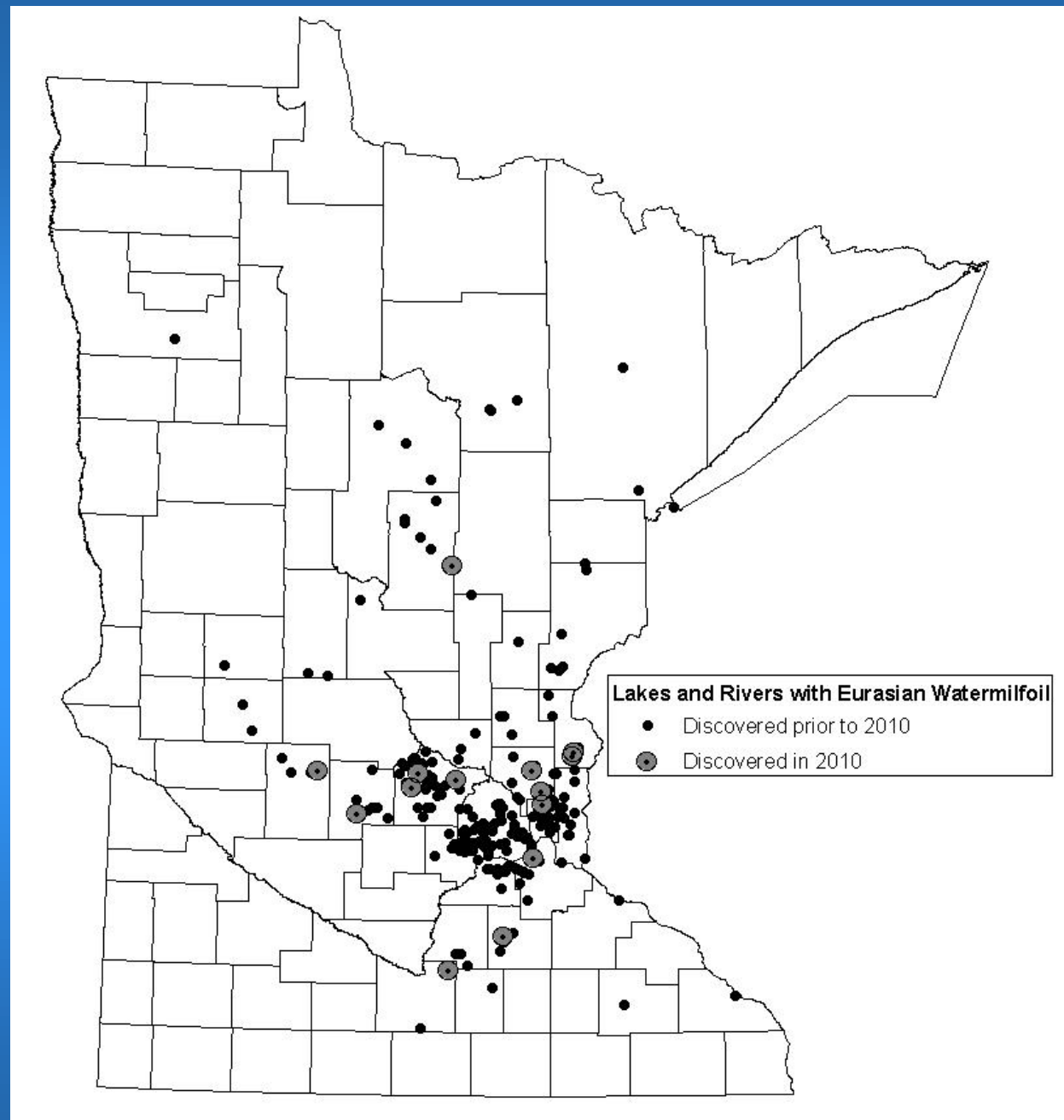
Eurasian Watermilfoil

Myriophyllum spicatum

- Native to Europe
- 12-21 leaflet pairs per leaf
- Leafs are limp when out of water
- Spreads by vegetative reproduction
- Can form dense mats at the surface



Eurasian water milfoil Distribution 2010



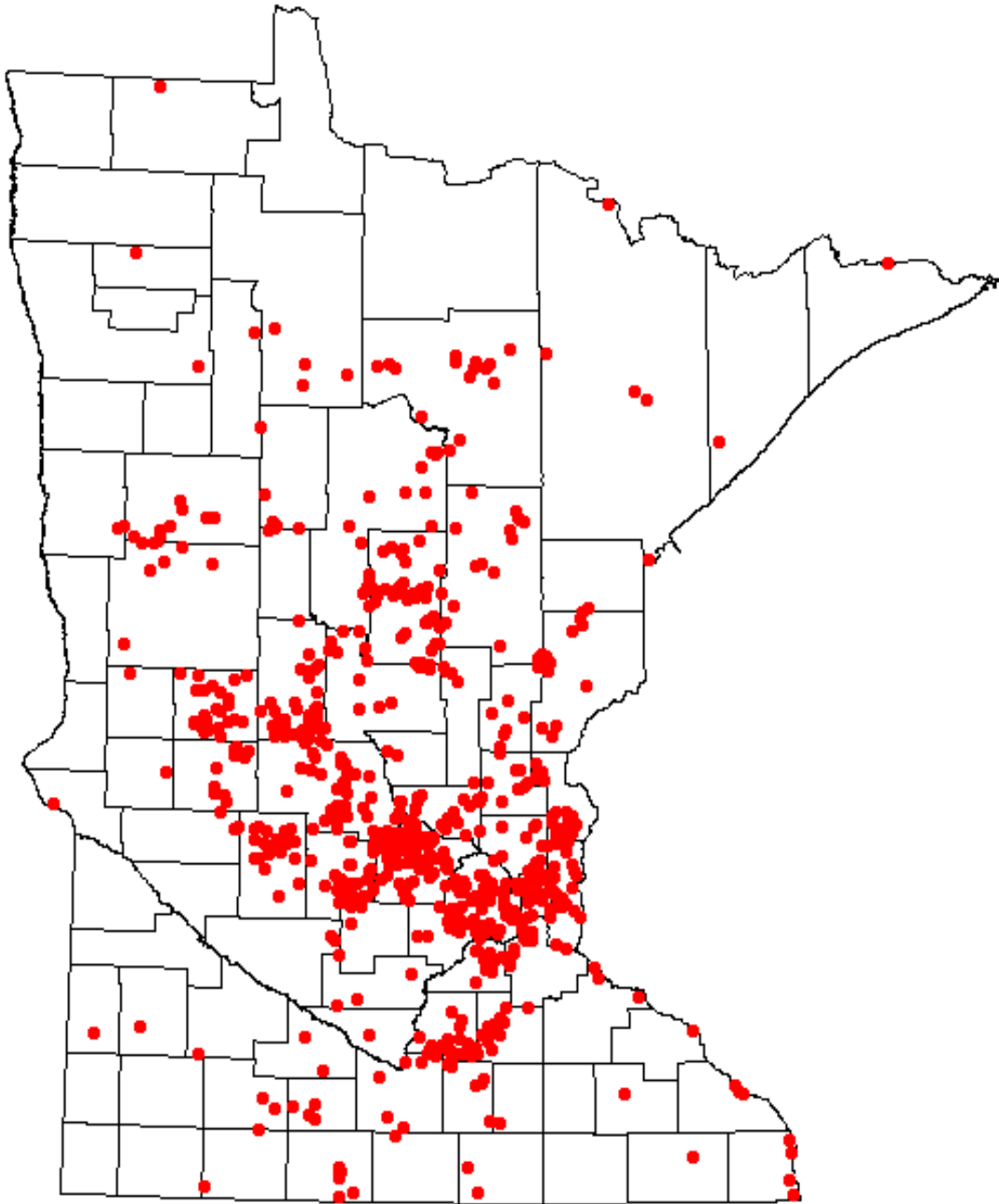
Curly-leaf pondweed

- Can grow into dense mats of vegetation
- Found throughout MN
- Has been attributed to some water quality decreases
- A lot of money is being spent trying to combat CLP when it becomes an environmental, economic, or navigational issue.



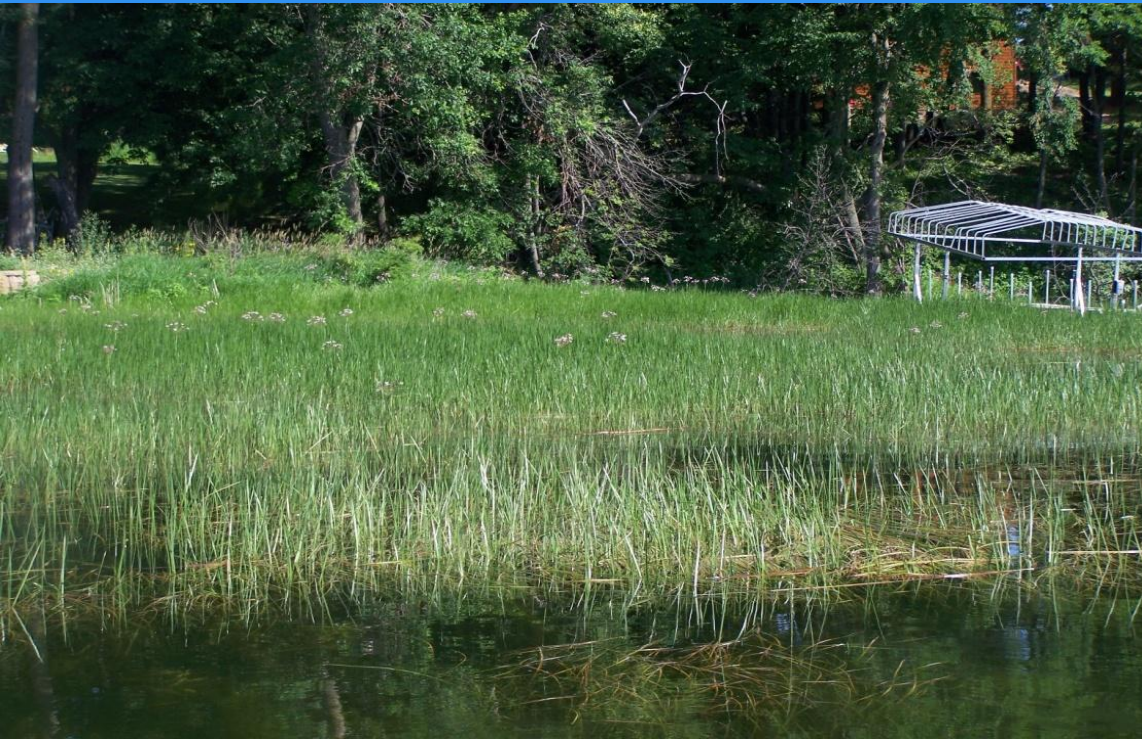
Curly pondweed in Minnesota
Potamogeton crispus
Photo by Vic Ramey
Copyright 2001 Univ. Florida

Curly-leaf pondweed locations in MN

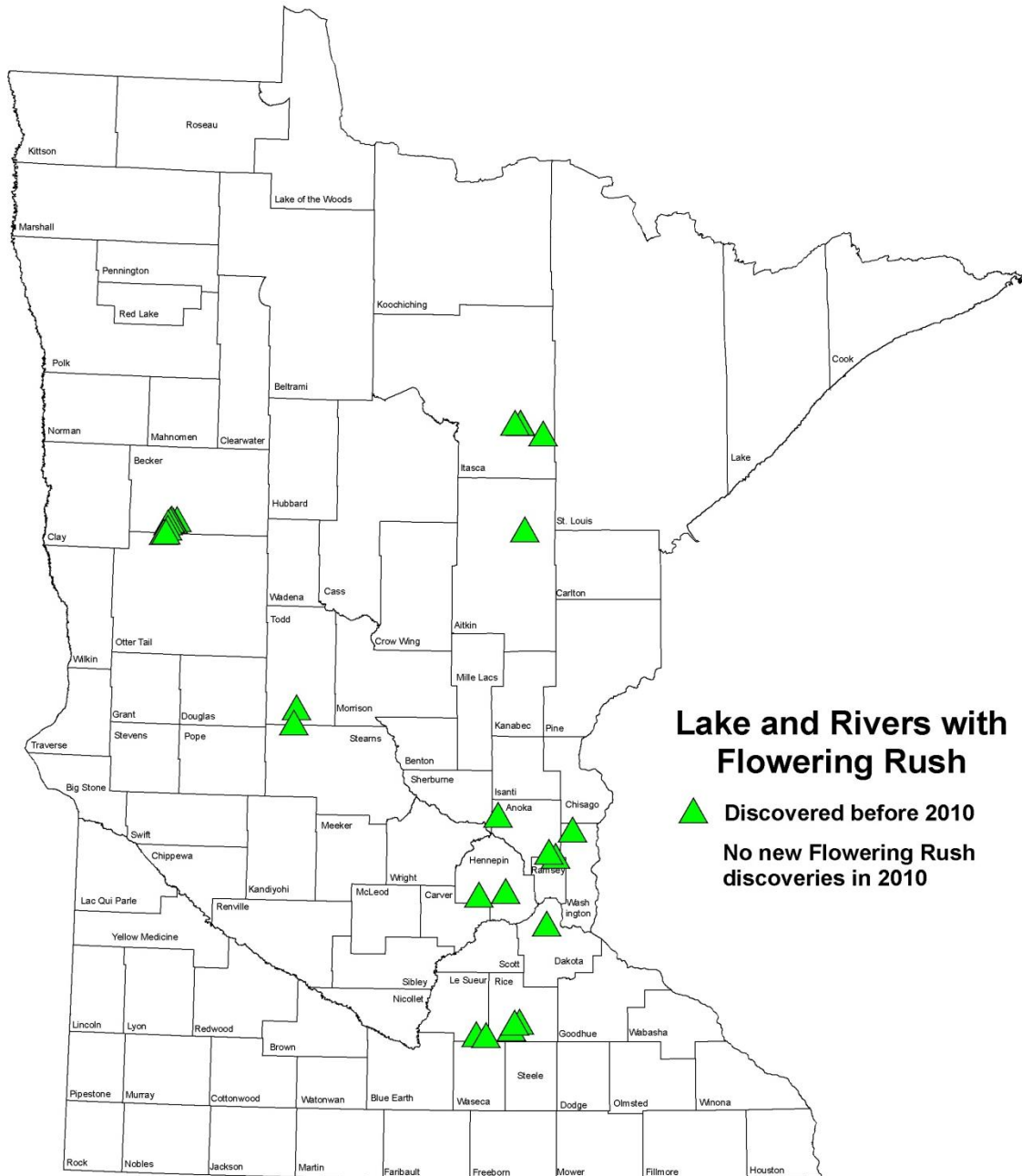


Flowering Rush

- Minnetonka in 2009
- Nuisance levels in Detroit Lakes Chain (Melisa, Sallie)



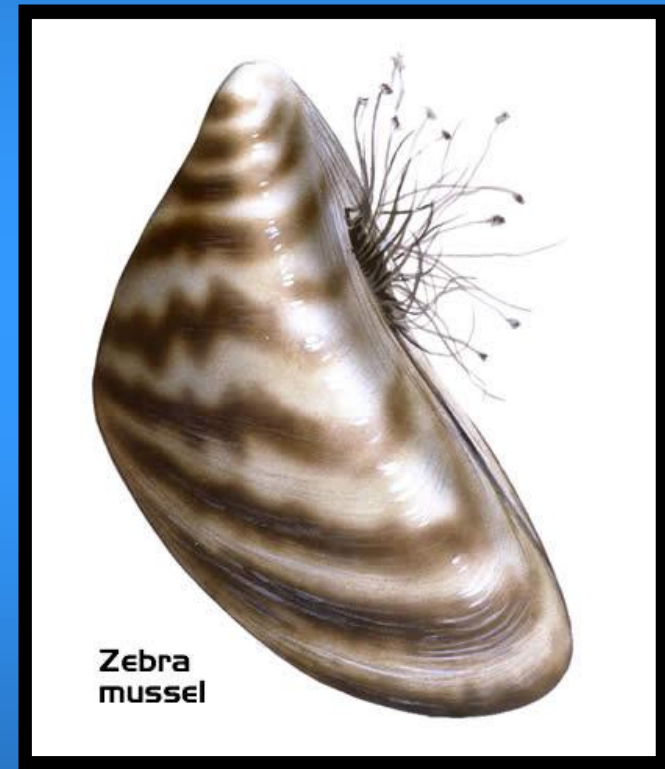
Flowering Rush Distribution in MN



Zebra Mussels

Dreissena polymorpha

- Native to Russia
- Filter feeders
- May disrupt food web dynamics
- Unique byssal threads
- Attach to hard surfaces as boats
water pipes, docks, rocks, and plants



Zebra Mussels filter feeding



Zebra mussel

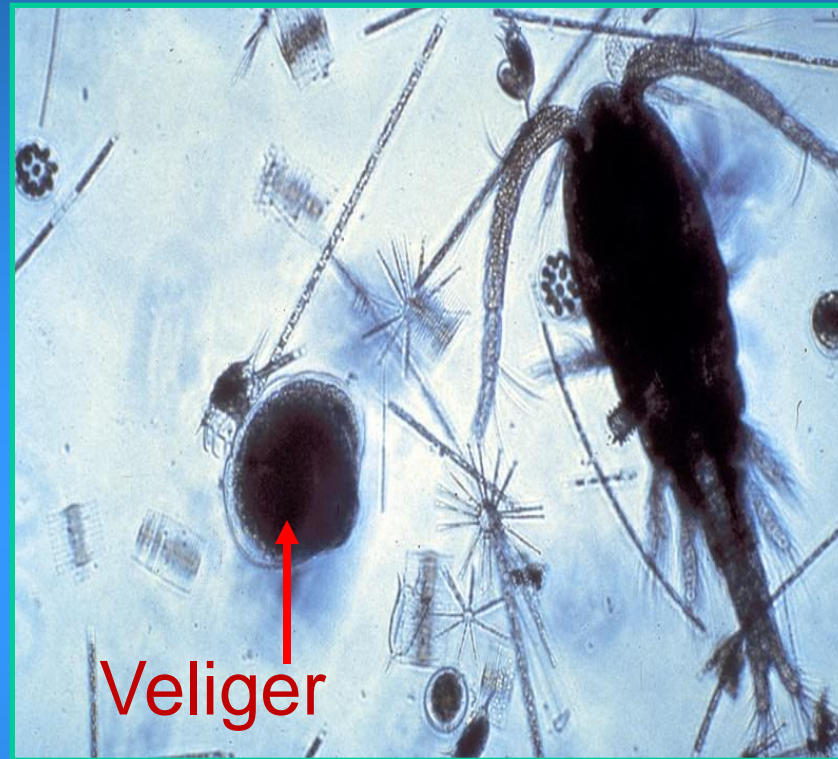


- kill native mussels
- filter water except some toxic algae
- significant cost to industry...plugged pipes
- sharp shells

zebra mussel



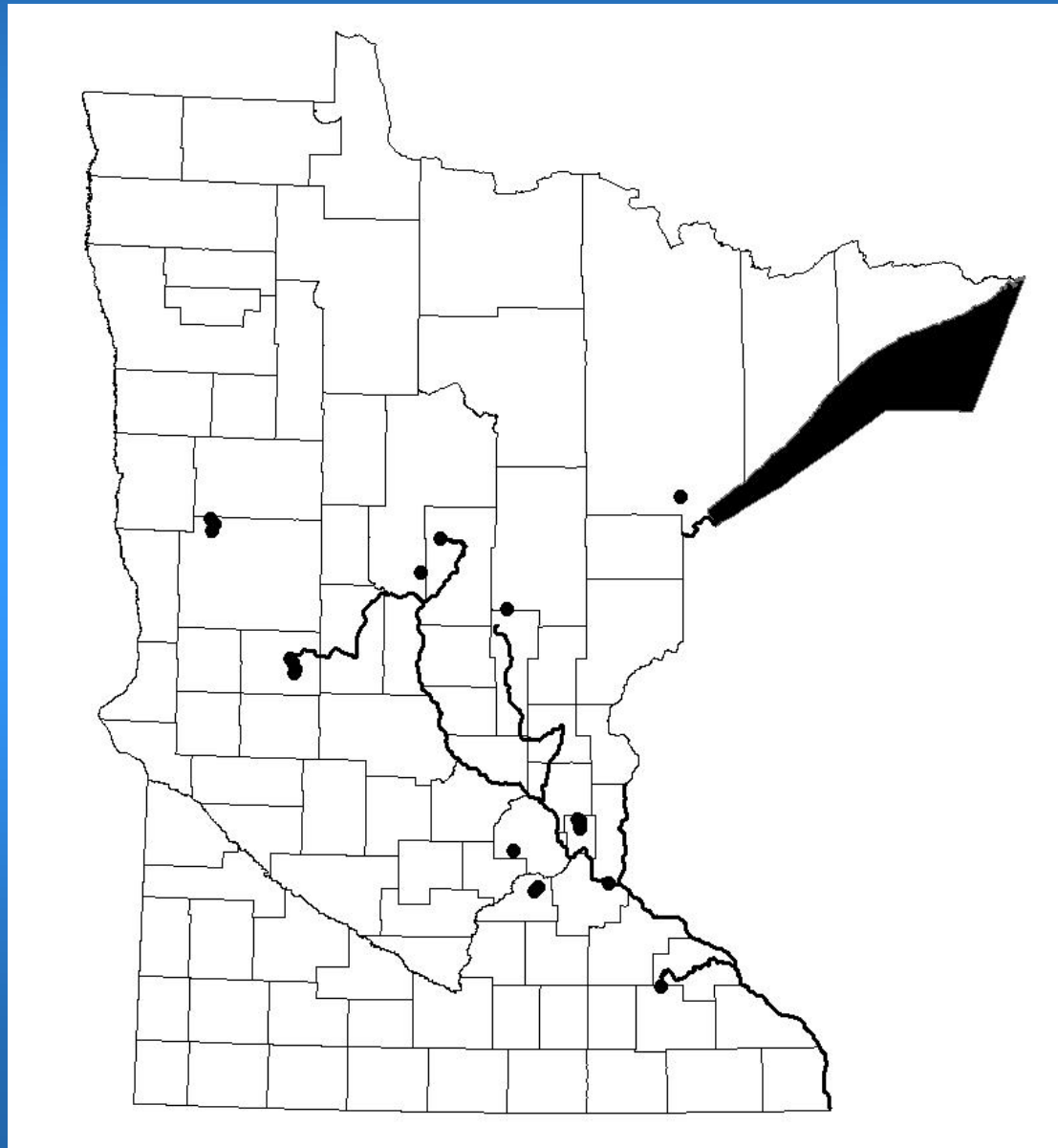
Zebra Mussel Reproduction



- Females broadcast up to 1 million eggs per year
- Reproduction at water temperatures near 54 F
- Veliger stage (feeding organ & shell forms)
- Settling stage (byssal threads have formed)
- Attaches to hard surface

Zebra Mussel Distribution

2010



An aerial photograph of the Brainerd Lakes Area in Minnesota, showing a network of lakes and surrounding land. The lakes are dark blue, and the land is a mix of green and brown. A grid of thin white lines is overlaid on the map. Three specific locations are highlighted with white text labels.

Ossawinnamakee
Lake Oct. 3, 2003

Brainerd Lakes Area Zebra Mussel Locations October 2010

Gull Lake
Oct. 5, 2010

Rice Lake
Oct. 17, 2005

Gull Lake

Oct. 5, 2010

Zebra mussels found
On boat lift and
aquatic plants

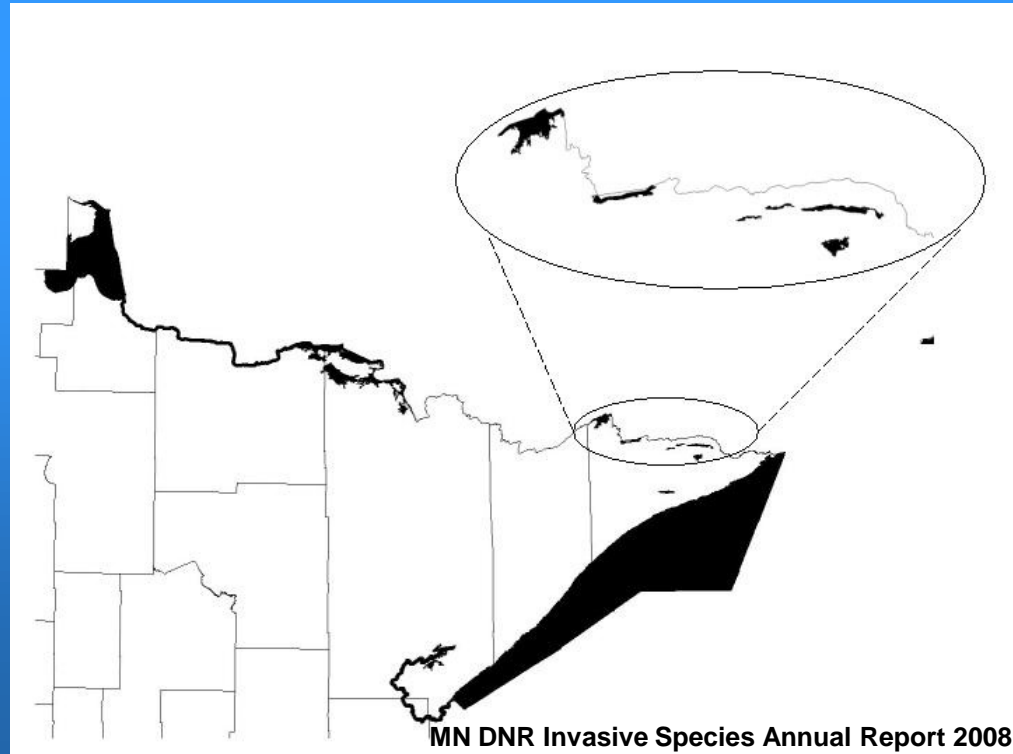


Gull Lake Sept. & Oct. 2011



Spiny waterflea

- Present in Lake of the Wood to Lake Superior Basins
- Spreading annually
- No known effective / selective management option

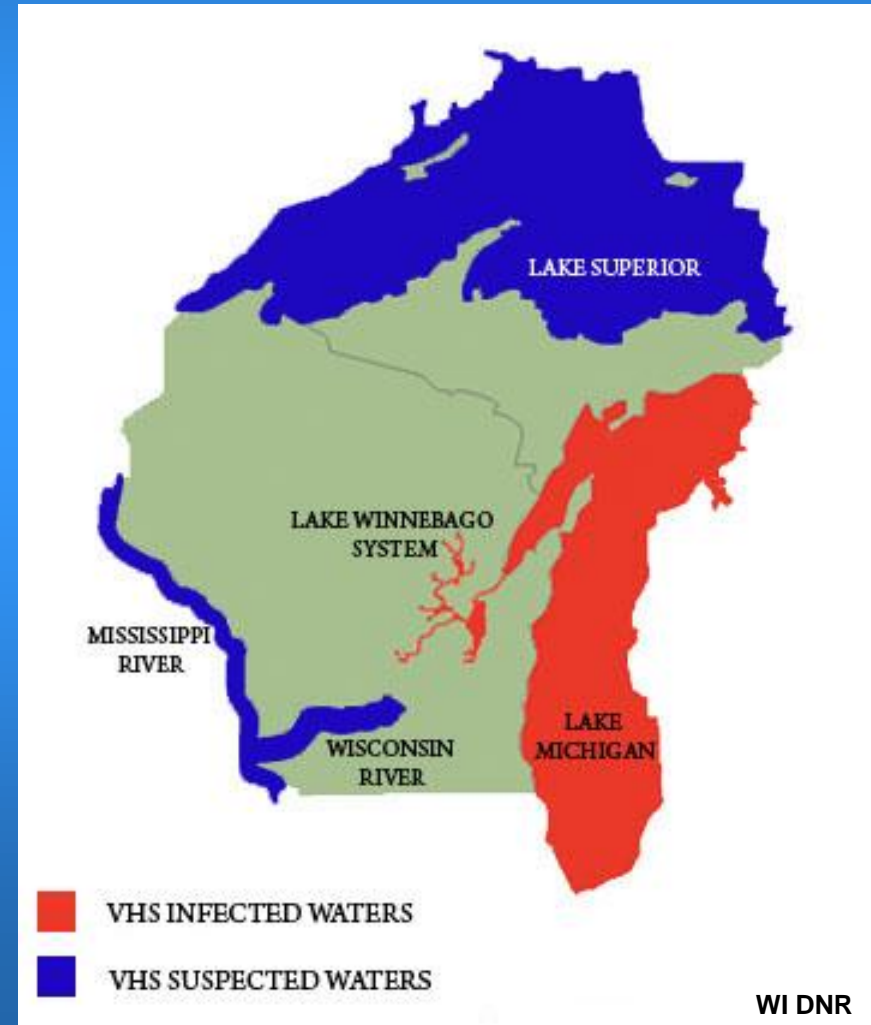


In MN: **No**

VHS

Viral Hemorrhagic Septicemia

- Pathogen
- MN DNR is actively testing
- Private industry testing



Viral Hemorrhagic Septicemia

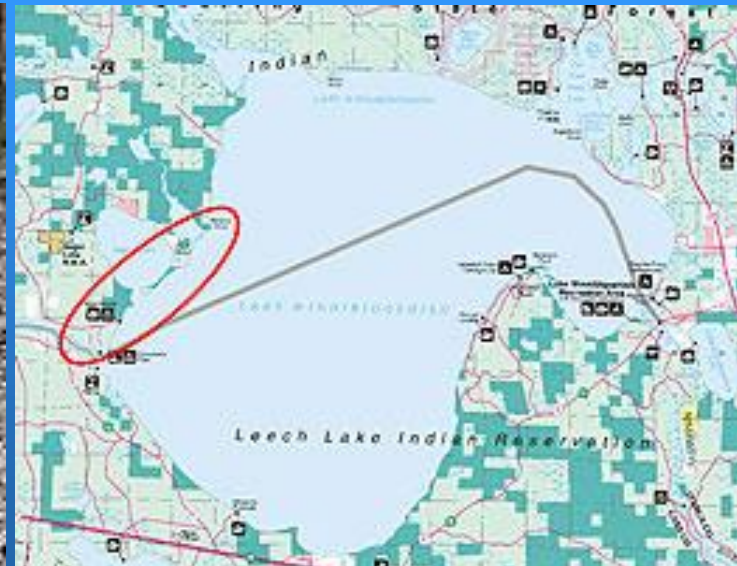
- 50 species of fish are known to be susceptible
- A few Large kills of freshwater drum, round gobies, muskellunge have occurred on the Great Lakes (2006)
- Great Lakes appears to have Atlantic Coast strain



In MN: **YES**

Faucet Snails

- Present in Mississippi River south of Winona
 - > 20,000 scaup and coot die-off
- Lake Winnibigoshish
 - > 6,000 scaup die-off in 2007
 - < 1,000 scaup die-off in 2008
- Host for parasitic trematode



Are they Next?



Northern Snakehead



Hydrilla



Bighead and Silver Carp

How do I know if a water is designated as “Infested”?



- **Signs**
are posted at
infested waters
- **List**
in Fishing Regs
booklet
- **Designation
order**
on DNR Web
Site

Close calls:

- 2007: Boat lift transported from Ossawinnamakee to Pelican



AQUATIC INVASIVE SPECIES 2011 LEGISLATIVE CHANGES

Division of Enforcement

Division of Ecological and Water Resources



2011 DNR AIS Legislation Initiative

- Increase efforts to prevent transportation and spread of AIS
- Provide more authority for inspections and enforcement
- Require service provider permits
- Restrict use of nets/equipment used in infested waters
- Expand AIS training requirements to service providers and bait harvest workers
- Watercraft AIS rules decals
- Seasonal equipment such as docks to be returned to the same water
- Drain plug exception for emergency response vehicles

Minnesota Regulations 2011

When leaving waters of the state a person **must drain** **water-related equipment** holding water and live wells and bilges by removing the drain plug before transporting the water-related equipment off the water access or riparian property. (*not just on public roads anymore!!*) (84D.10 Subdivision 4)



Emergency Vehicle Exception

‘Pull the Plug’

MS 84D.10.4(c)



- Emergency response vehicles and equipment
- May replace the drain plug and transport on roadways
- **ONLY** after all water has been drained
and prior to leaving waters of the state

Water Related Equipment 2011

Water-related equipment means a motor vehicle, boat, watercraft, dock, boat, lift, raft, vessel, trailer, tool, implement, device, or any other associated equipment or container, including but not limited to portable bait containers, live wells, ballast tanks,.....

(84D.18a Water Related Equipment)



Regulations



“A person may not place or attempt to place into waters of the state a watercraft, trailer, or plant harvesting equipment that has aquatic macrophytes, zebra mussels, or prohibited invasive species attached.” (MN Statutes 84D.10)

Property Owners



- Docks, boat lifts, and other water-related equipment that are removed from infested waters and placed on the riparian property on a seasonal basis or for short-term maintenance purposes can be returned to the same waters.

Inspectors and Inspections

MS 84D.01.8c; 84D.105.1; 84D.105.2



- Commissioner may train, authorize, and designate inspectors
- Conservation officers are defined as inspectors
- Licensed peace officers are defined as inspectors
- Inspectors may visually and tactilely inspect water-related equipment
- Inspectors may prohibit the placement or operation of water-related equipment if person refuses inspection
- Non-licensed inspectors to refer cases to licensed officer when person refuses inspection

Inspection of Equipment

MS 84D.105



- Officers may utilize check stations where water-related equipment is placed into or removed from waters
- Officers may inspect any watercraft or water-related equipment that is stopped at a water access site, any other public location in the state, or private location where the water craft or water-related equipment is in full view

Commercial Bait Harvesting

MS 84D.03.3(c)



- Equipment used for harvesting bait in infested waters
- **CANNOT** *be*
- Transported to or used in any other waters other than waters listed on infested waters bait harvest permit

Commercial Bait Harvesting Training for Workers

MS 84D.11.2a



- Any person working for a permittee harvesting in infested waters:

Must complete annual training before working for the permittee

Service Providers

MS 84D.01.15a; 84D.108; 84D.15.2 *Effective*
7-1-2011



- Persons installing/removing equipment from/to waters of the state for hire
- Must have permit and invasive species training
- Permit good for 3 years; \$50 cost, deposited to invasive species account
- Any person working for a permittee is required to complete AIS training
- Permits can be revoked, denied, or modified

AIS Watercraft Rules Decal

MS 86B.508; 86B.811.1a *Effective 7-1-2011*



- AIS rules decal required for all watercraft before launching or operating on any waters of the state
- Both owner and operator requirement
- Needs to be attached to watercraft
- Petty misdemeanor penalty
- Written warnings only until August 1 2014!
- Public education coincides with 3 year watercraft licensing cycles

Penalties

Civil Citations

Penalty

Fail to drain infested water

\$ 50

Transport aquatic plants on public road

\$ 50

Transport infested water w/o permit

\$200

Transport or possess prohibited species

\$250

Launch into non-infested waters

\$100 - \$500

Subsequent offenses

\$1,000

Refuse inspection

Lose boat license for year

Misdemeanor

Up to \$1000 and/or 90 days

Gross Misdemeanor

Up to \$3000 and/or 1 year



Zebra Mussel Incident: Rose lake



Adjacent dock wheel with ZM's



Rose Lake, Otter Tail County Oct. 4, 2011



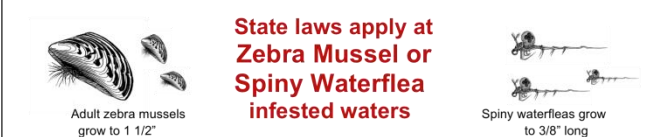
Rose Lake zebra mussel lift site: October 2011 copper sulfate treatment



Public Awareness

Tools to raise public awareness include several mass media:

- radio
- TV
- billboards
- newspapers
- cards



State laws apply at Zebra Mussel or Spiny Waterflea infested waters


Adult zebra mussels grow to 1 1/2" Spiny waterfleas grow to 3/8" long

It's the Law! Before you leave a water access at *infested waters* with zebra mussels or spiny waterfleas you must:

- ✓ **Drain water** from motor, boat bilges, livewells, and other boating equipment holding water. Drain plugs must be **removed** from bilges and livewells. (MN Rule 6216.050, Subp. 3 and MN Statutes 84D.13)
- ✓ **Drain water from bait containers.** (MN Rule 6216.0500, Subp. 3) **If you want to keep your live bait – you must replace water in bait containers with tap or spring water.** Place *unwanted* bait in the trash where it is convenient.
- ✓ **Remove all aquatic plants and zebra mussels** from your boat, trailer, anchors, ropes, and fishing lines. (M.S. 84D.05, 84D.09, & 84D.13)

Before reuse, **remove waterfleas and mud** from boats, anchors, lines, and gear.

For more information:
Contact the Department of Natural Resources
at 1-888-MINNDNR or www.dnr.state.mn.us



STOP AQUATIC HITCHHIKERS!

✓ Inspect.
✓ Clean.
✓ Drain.

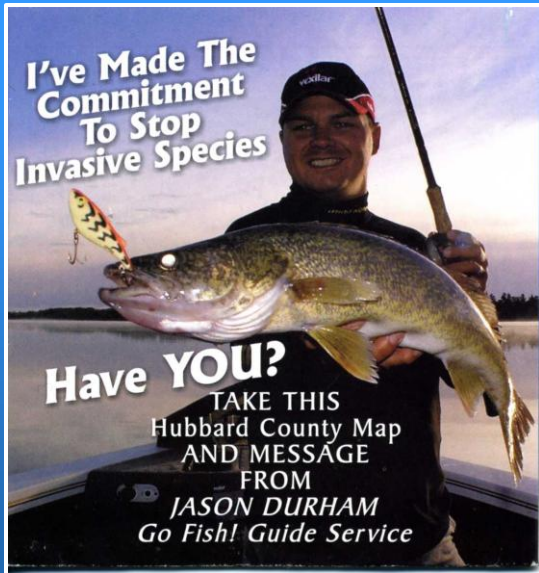


LAMAR

Prevention - Grants

Types of grants:

- Local partners for DNR watercraft inspectors
- Local public awareness products



Watercraft Inspections



Inspect watercraft



Dear Boater:

Minnesota has an important law that applies to anglers, hunters, and others using M lakes and rivers.

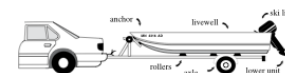
It is unlawful* to transport aquatic plants, animals, or other organisms on watercraft or to place a watercraft or trailer with aquatic plants attached into the state's waters.

This is a state law because aquatic invasive species such as Eurasian Water Milfoil can be transported from one water body to another by watercraft carrying aquatic plants. The law will also help prevent small zebra mussels, and other invasive species which can attach to aquatic plants, from being spread by boaters.

Recommended Actions

Before leaving the water access site and transporting boats and equipment:

- ✓ **Inspect** your boat, trailer, and equipment and **remove** visible aquatic plants, zebra mussels, and other animals *before* leaving a water access.
- ✓ **Drain** water from the bait container, livewell, bilge, and transom wells *before* leaving a water access.
- ✓ **Dispose** of unwanted bait in the trash.
- ✓ **Spray/dry** your boat, trailer, and equipment *before* going to another water body.



For more information contact:

DNR- Invasive Species Program
500 Lafayette Road, St. Paul, MN 55155-4025,
(651) 259-5100
www.snr.state.mn.us/invasives/index.html

*Exceptions It is still legal to transport:

- duckweeds (tiny, free-floating plants, 1/8 to 1/4 inch) cattails, bulrushes and other emergent plant stems used for shooting or observation blinds;
- aquatic plants legally purchased from commercial sources for aquarium or ornamental purposes;
- aquatic plants brought to the DNR in a sealed container for the purpose of identifying or reporting a species;
- legally harvested wild rice; and
- aquatic plants as a harvest or control activity.



DNR Decontamination Units expanding program in 2012



WARNING ZEBRA MUSSELS have been found in **Rice Lake**

A photograph showing a man in a blue shirt and a young boy in a red shirt standing next to a small white boat on a trailer. The man is leaning over the boat, possibly adjusting something on the trailer. The boy is standing next to him, looking at the boat. The boat is white with a black stripe and has the number '100' on its side. The background is a sandy beach with some other boats visible in the distance.



DRAIN water from your boat, motor, bilge, live wells, and bait containers before leaving this water access. Zebra mussel larvae (veligers) are microscopic, invisible to the naked eye. What looks like a bait bucket full of lake water could contain hundreds of veligers. It is critical to drain the water to prevent new infestations.

